Owner's Manual

Audiopipe®

Hwy 836, U.S.A.

APK-2500
APK-3500
APK-4500
APK-5500
APK-250.2
APK-400.4
APK-700.5

SOUND QUALITY AMPLIFIER

1. INTRODUCTION

Congratulations and thank you for purchasing Audiopipe amplifiers, the logical choice in mobile audio amplification. Audiopipe products have been designed and engineered with the highest quality components and top of the line workmanship to help you reach the superior sound you are after.
To achieve optimal performance of your system, please take a few moments to read over this manual if needed before starting your installation.

2. DESIGN FEATURES

2-1. DIGITAL MONOBLOCK DESIGN FEATURES

- 1ohm stable Highly efficient and powerful digital monoblock.
- Strappable 2 mono block amps to 2 ohm
- High purity copper trace circuit boards.
- 0 gauge power / ground terminals
- Hand-wound high grade power supply
- 24dB low pass and subsonic filter
- The most safe protection circuits are applied to protect the amplifiers and audio systems.
  - * Thermal protection
  - * DC offset
  - * Speaker short protection
  - * Low & High battery voltage protection circuit

2-2. FULL RANGE MULTI-CHANNELS DESIGN FEATURES

- 2ohm stereo or 4ohm mono stable full range amplifiers.
- High purity copper trace and double sided circuit boards.
- Hand-wound high grade power supply
- 12dB variable high pass, low pass filter and bass boost.
- The most safe protection circuits are applied to protect the amplifiers and audio systems.
- * Thermal protection , * DC offset, * Speaker short protection

3. SPECIFICATIONS

3-1. DIGITAL MONOBLOCK

1ohm stable digital monoblock amplifiers
Two amplifiers strappable to 2ohm
Frequency response : 10Hz ~ 270Hz
Signal to Noise Ratio : 95dB
Damping Factor : 200 <
Input sensitivity : 6V ~ 0.2V
Low pass filter : 35Hz ~ 250Hz @ 24dB / Oct
Subsonic filter : 10Hz ~ 50Hz @ 24dB / Oct
Bass Boost : 0 ~ 9dB @ 45Hz
Phase : 0 ~ 180 degree

Master/slave connection (Strappable to 2ohm)
Remote level control is included
0 gauge power & ground terminals.
Working Voltage : APK-2500 (8.5V~16V), APK-3500, APK-4500 & APK-5000 (8.5V~18V)
External fuse rating (strappable) : APK-2500 : 200A (400A) , APK-3500 : 350A (700A)
APK-4500 : 400A (800A), APK-5500 : 450A (900A)
MAX OUTPUT POWER AT 1OHM.
APK-2500 : 2500Watts (2ohm strappable : 5000Watts)
APK-3500 : 3500Watts (2ohm strappable : 7000Watts)
APK-4500 : 4500Watts (2ohm strappable : 9000Watts)
APK-5500 : 5500Watts (2ohm strappable : 11000Watts)

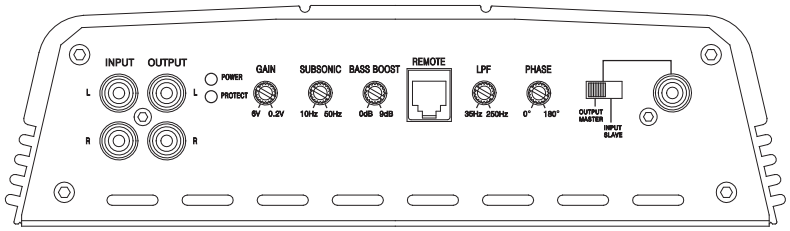
3-2. FULL RANGE MULTI-CHANNELS

2ohm stereo or 4ohm mono amplifiers
Frequency response : 20Hz ~ 20KHz
Signal to Noise Ratio : 105dB
Damping Factor : 200 <
Input sensitivity : 6V ~ 0.2V
High pass filter : 20Hz ~ 5KHz @ 12dB / Oct
Low pass filter : 50Hz ~ 5KHz @ 12dB / Oct
X-over : HPF / FULL / LP-BP (Band-pass capable)
Bass Boost : 0 ~ 18dB @ 45Hz
Remote level control is included

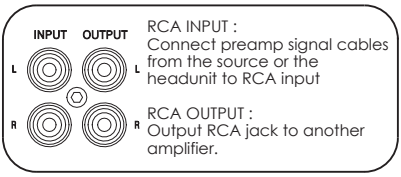
MAX OUTPUT POWER
APK-250.2 : 2000Watts
APK-400.4 : 2500Watts
APK-700.5 : 3000Watts

4. CONTROLS & CONNECTIONS

4-1. DIGITAL MONOBLOCK



RCA INPUT & OUTPUT



RCA INPUT :
Connect preamp signal cables from the source or the headunit to RCA input

RCA OUTPUT :
Output RCA jack to another amplifier.

POWER & PROTECT LED

Power LED :
Green-lit shows correct operation.

Protect LED :
Red-lit shows general malfunction, faulty connection, thermal overload, speaker short protection.

GAIN (6V ~ 0.2V)

GAIN

6V 0.2V

Used to reach maximum amplifier power by matching the output voltage of with a wide variety of the headunits

REMOTE PORT

REMOTE

This port is for remote level control. Plug remote control's connector for remote level control's use. Remote controls level from the driver's seat.

SUBSONIC FILTER (10~50HZ @ 24dB)

SUBSONIC

10Hz 50Hz

Control the high pass frequency for the speaker outputs to eliminate extreme low frequencies. Subsonic is always on with a 24dB per octave slope.

LOW PASS FILTER (35~250HZ @24dB)

LPF

35Hz 250Hz

Controls the low pass filter frequency for the speaker output. The Low pass filter is always on with 24dB per octave slope.

BASS BOOST (0 ~ 9dB)

BASS BOOST

0dB 9dB

The bass boost boosts frequency centered at 45Hz.

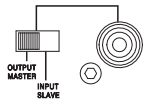
PHASE (0~180 DEGREE)

PHASE

0° 180°

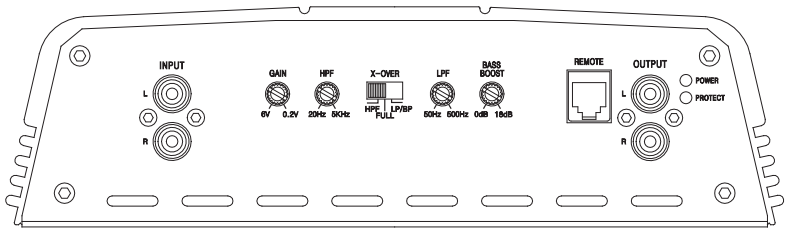
Controls phase 0~180 degrees for fine tunning your low end staging in your vehicle or fully switching polarity if inverting your woofers.

MASTER / SLAVE (STRAPPABLE)

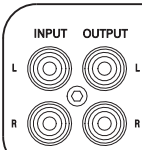


Output master / input slave connection makes 2 amplifiers strapped to 2ohm
Set Output master / input slave switch to output master position for Master amp which is connected to headunit.
Set Output master / input slave switch to input slave position for Slave amplifier
Connect RCA cable from master amplifier to slave amplifier.
Output master / input slave connection impedance is 2ohm.

4-2. FULL RANGE 2CHANNEL



RCA INPUT & OUTPUT



RCA INPUT :
Connect preamp signal cables from the source or the headunit to RCA input

RCA OUTPUT :
Output RCA jack to another amplifier.

GAIN (6V ~ 0.2V)

GAIN

6V 0.2V

Used to reach maximum amplifier power by matching the output voltage of with a wide variety of the headunits

HIGH PASS FILTER (20~5KHz @12dB)

Controls the high pass filter frequency for the speaker output.
The Low pass filter is always on with 12dB per octave slope.

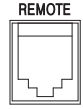
BASS BOOST (0 ~ 18dB)

The bass boost boosts frequency centered at 45Hz.

X-OVER (HPF-FULL-LP/BP)

It selects the crossover as High pass, Full and Low pass & Band pass filter.
The selected crossover has effect.

REMOTE PORT



This port is for remote level control.
Plug remote control's connector for remote level control's use.
Remote controls level from the driver's seat.

LOW PASS FILTER (50~500HZ @12dB)

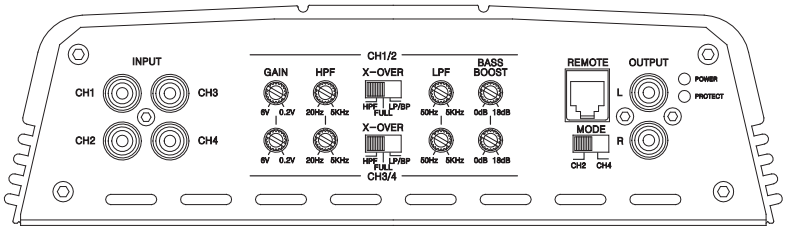
Controls the low pass filter frequency for the speaker output.
The Low pass filter is always on with 12dB per octave slope.

POWER & PROTECT LED

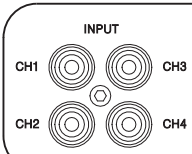
Power LED :
Green-lit shows correct operation.

Protect LED :
Red-lit shows general malfunction, faulty connection, thermal overload, speaker short protection.

4-3. FULL RANGE 4CHANNEL



RCA INPUT



RCA INPUT :
Connect preamp signal cables from the source or the headunit to RCA input

HIGH PASS FILTER (20~5KHz @12dB)

Controls the high pass filter frequency for the speaker output.
The Low pass filter is always on with 12dB per octave slope.

GAIN (6V ~ 0.2V)

Used to reach maximum amplifier power by matching the output voltage of with a wide variety of the headunits

X-OVER (HPF-FULL-LP/BP)

It selects the crossover as High pass, Full and Low pass & Band pass filter.
The selected crossover has effect.

LOW PASS FILTER (50~500Hz @12dB)

Controls the low pass filter frequency for the speaker output.
The Low pass filter is always on with 12dB per octave slope.

MODE

Mode swtich selects CH2 or CH4 input in CH2 position, you need only CH1 and CH2 input for all 4channels' input In CH4 position, you need all 4channels' each input.

BASS BOOST (0 ~ 18dB)

The bass boost boosts frequency centered at 45Hz.

RCA OUTPUT

RCA OUTPUT :
Output RCA jack to another amplifier.

REMOTE PORT

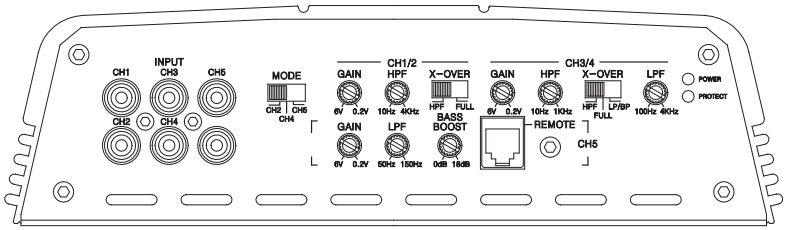
This port is for remote level control.
Plug remote control's connector for remote level control's use.
Remote controls level from the driver's seat.

POWER & PROTECT LED

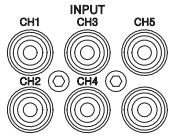
Power LED :
Green-lit shows correct operation.

Protect LED :
Red-lit shows general malfunction, faulty connection, thermal overload, speaker short protection.

4-4. FULL RANGE 5CHANNEL



RCA INPUT



RCA INPUT :
Connect preamp signal cables from the source or the headunit to RCA input

HIGH PASS FILTER

Controls the high pass filter frequency for the speaker output.
The Low pass filter is always on with 12dB per octave slope.
CH1/2 has range from 10Hz to 4KHz.
CH3/4 has range from 10Hz to 1KHz

MODE

Mode swtich selects CH2, CH4 or CH5 input
in CH2, you need only CH1 and CH2 inputs for all 5channels' input
In CH4, you need only CH1 to CH4 inputs for all 5channels' input
in CH5, you need all inputs connected.

X-OVER (HPF-FULL-LP/BP)

It selects the crossover as High pass, Full and Low pass & Band pass filter.
The selected crossover has effect.

LOW PASS FILTER

Controls the low pass filter frequency for the speaker output.
The Low pass filter is always on with 12dB per octave slope.
CH3/4 has range from 100Hz to 4KHz
CH5 has range from 50Hz to 150Hz.

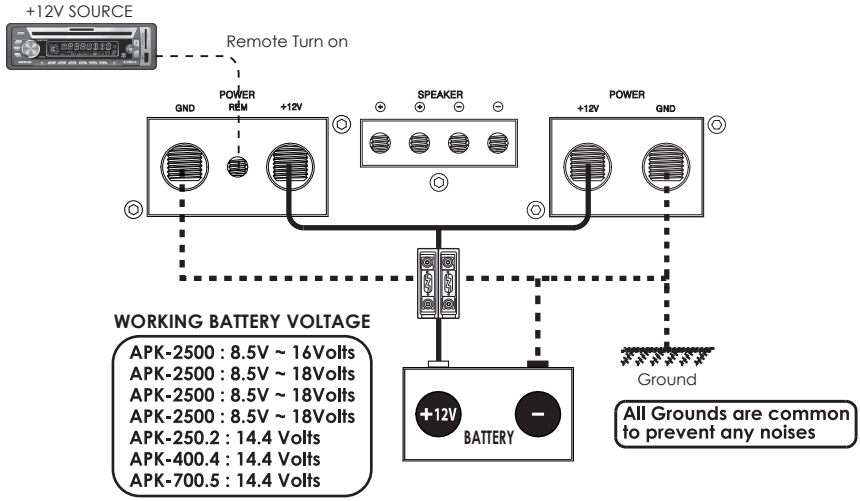
REMOTE PORT

This port is for remote level control.
Plug remote control's connector for remote level control's use.
Remote controls level from the driver's seat.

BASS BOOST (0 ~ 18dB)

The bass boost boosts frequency centered at 45Hz.

4-5. +12V, REMOTE & GROUND CONNECTION



+12V Power

Connect the +12V terminal of the amplifier to the + terminal of the battery using the same diameter as the ground cable, making sure you install in-line fuse holder, approximately 300 or 400 mm.
From the + terminal of battery, making sure that there is no fuse in the battery holder
All audio pipe amplifiers should use external fuses and fuse holder.
Connect one end of fuse holder to the power cable going into the amplifier and the other end of fuse holder to the positive battery.
This fuse location will protect the system and the vehicle against the possibility of a short circuit in the power cable. Be sure to use fuses and fuse holder adequate for the application.

REMOTE

Run a remote turn on cable (at least 18ga) from the switched +12V source.
This may be a toggle switch, a relay, source unit's remote trigger cables, or power antenna trigger cable.
Connect the remote turn on cable to The REM (remote) terminal.

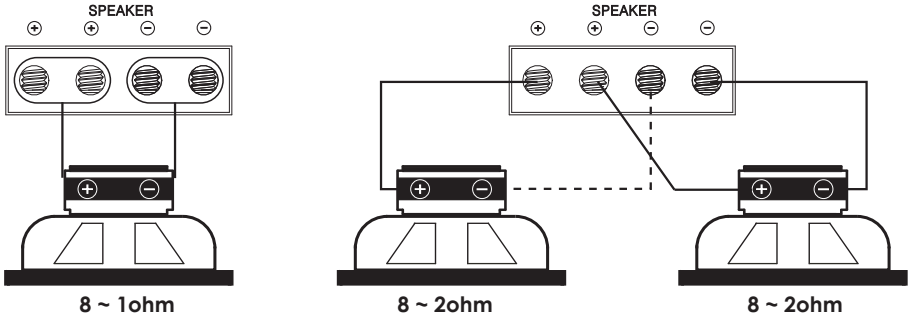
GROUND

Disconnect the battery and connect the GND (ground) terminal to the cars chassis.
Keep this cable as short as possible (not longer than 20 inches).
Making sure that the connection with the chassis is rust free and clear of paint or grime.

5. SPEAKER CONNECTIONS

5-1. DIGITAL MONOBLOCK SPEAKER CONNECTION

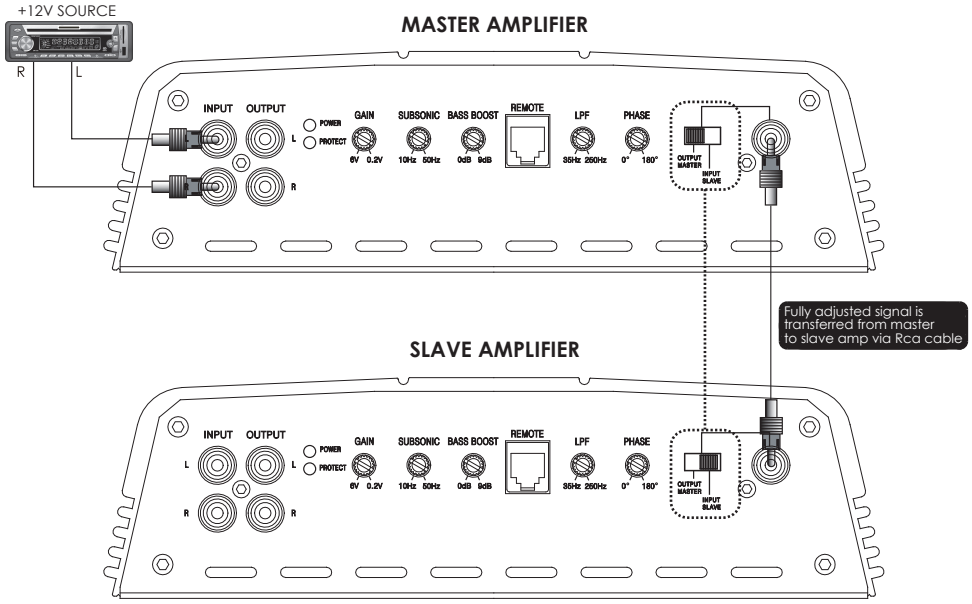
This terminal connects amplifiers to the speakers . Minimum speaker cable should be 12 gauge or larger. Connect the subwoofer speakers by checking the impedance 1 ohm for single unit or 2 ohm for strappable connection.



5-2. DIGITAL MONOBLOCK LINK CONNECTION

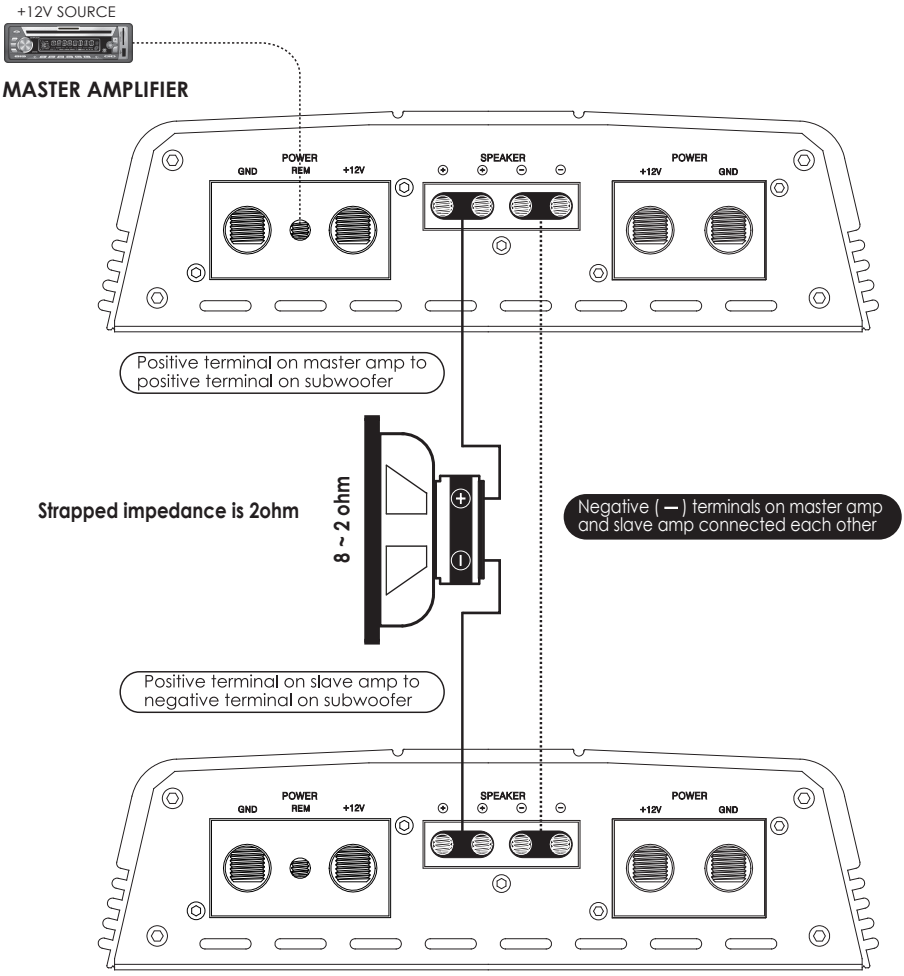
INPUT CONNECTION ;

Step 1. Connect the master amplifier to the head-unit and set its output master / input slave switch to output master.
Step 2. Set slave amplifier output master / input slave switch to slave input.
Step 3. Connect RCA cable from the master to slave amplifier as shown in the diagram.



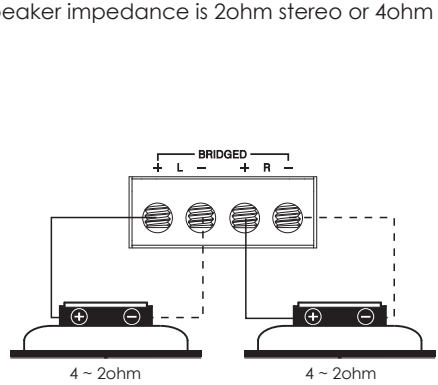
POWER & SPEAKER CONNECTION ;

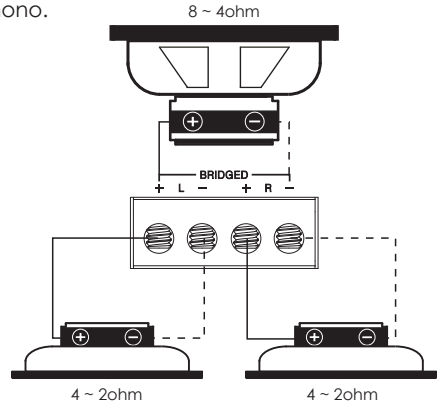
Step 1. Connect speaker cable (+) on master amp to subwoofer (+)
Step 2. Connect speaker cable (+) on slave amp to subwoofer (–)
Step 3. Connect speaker cable (–) on master amp to speaker cable (–) on slave amp



5-3. FULL RANGE 2CHANNEL SPEAKER CONNECTION

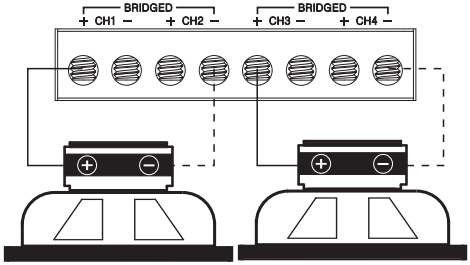
Minimum speaker cable should be 12 gauge or larger.
Speaker impedance is 2ohm stereo or 4ohm mono.

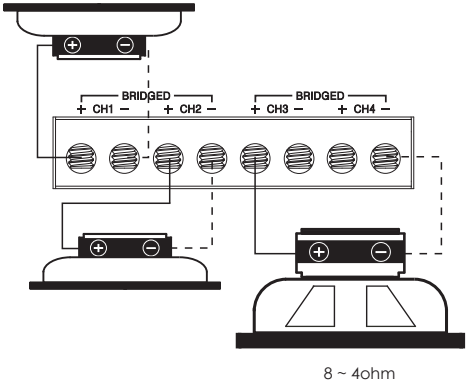


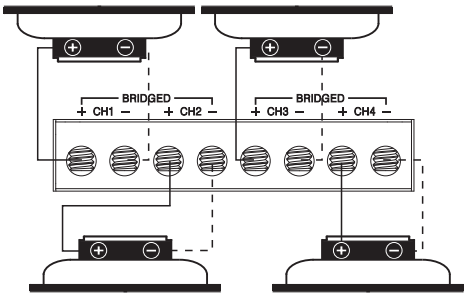


5-4. FULL RANGE 4CHANNEL SPEAKER CONNECTION

Minimum speaker cable should be 12 gauge or larger.
Speaker impedance is 2ohm stereo or 4ohm mono.

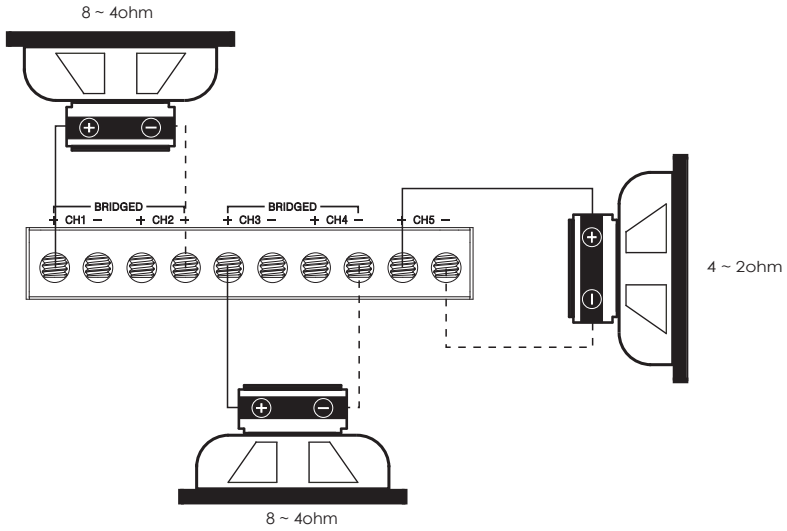


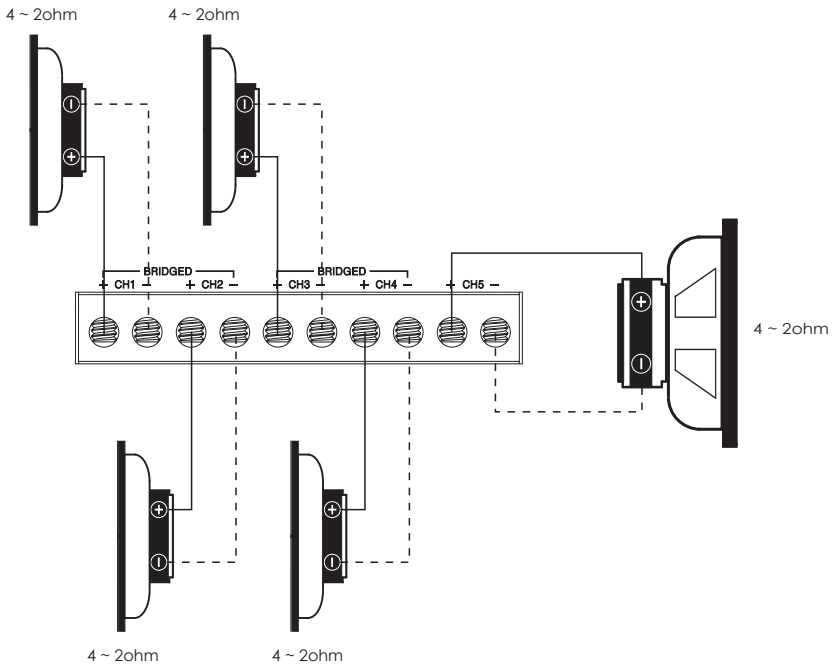




5-5. FULL RANGE 5CHANNEL SPEAKER CONNECTION

Minimum speaker cable should be 12 gauge or larger.
Speaker impedance for CH1 to CH4 is 2ohm stereo or 4ohm mono, CH5 is 2ohm stable only.





6. TROUBLE SHOOTING

NO SOUND (NO OUTPUT)

- Please check all connections, cables' rounting, short & voltage
- Please check the fuses , If they are blown, please replace with new one.
- Please check whether speakers work well, you can test speakers by connecting to another amplifier

PROTECTION

- Please check overload, overheat (thermal), short and voltage, DC offset.
- Digital monoblock amplifiers (APK-2500, APK-3500, APK-4500 & APK-5500) minimum working impedance is 1 ohm for all amplifiers as single unit and 2 ohm stable for the strapped operation.
- Full range multi channel amplifiers (APK-250.2, APK-400.4 & APK-700.5) minimum working impedance is 2ohm stereo or 4ohm mono. CH5 of APK-700.5 is 2ohm stable only.
- If amplifiers are shut down due to heat, they will be on some minutes later after cooling down. Please make better airflow and no obstruction around amplifiers for thermal protection
- APK-250.2, APK-400.4 & APK-700.5 working voltage is 14.4V.
  APK-2500 working voltage is 8.5V ~ 16V.
  APK-3500, APK-4500 AND APK-5000's working voltage is 8.5V ~ 18V.
- When over 4V DC comes into amplifiers, then, they will be DC protected.
- Check whether amplifiers work after removing RCA-Input.
  If amplifiers work, then check DC by checking RCA-input .
  When DC is over 4V at input, try by replacing +12V source unit .

DISTORTION & NOISE

- Readjust input level and check the speaker quality at another amplifier
  Replace poor quality speakers with good quality ones
- Check amplifiers and headunit's ground contact. all grounds should be common.
- Check Rca Jack, then repalce with new one or reroute Rca Jack.
- Engine noise is caused by poor grounding of amplifiers, headunit, other components, battery or alternator, so please check all grounding connection.

POOR BASS RESPONSE

- Please check speaker cables and reverse polarity.